

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

I. Status of Claims

1. Claims 1-23 are currently pending in the application.
2. Claims 1, 13, 15 and 21 have been amended in this Amendment in order to advance the prosecution of the pending application. The amendments to the claims have been made without the introduction of new matter. Support for the claim amendments is found in the specification.
3. Claims 8-10 and 19-20 have been withdrawn from consideration in view of the Restriction Requirement, subject to Applicant's request for rejoinder of these claims.
4. New claims 24-29 have been added. The new claims have been added without the introduction of new matter. Support for the new claims is found in the specification, for example, at page 14, lines 33-37, page 15, line 9, page 17, line 11 and page 49, line 6 to page 51, line 17.
5. Claims 2-7, 11-12, 14, and 16-18, and 22-23 have been cancelled without waiver or prejudice in this response.
6. After entry of the amendments, claims 1, 8-10, 13, 15, 19-21 and 24-29 remain pending.
7. Applicants reserve the right to pursue the subject matter of any withdrawn or cancelled claims in one or more continuing applications.

II. Response to Restriction Requirement

8. Applicant affirms the provisional election, with traverse, to prosecute the invention of Group I, claims 1, 13, 15, 21 and 23.
9. Applicant respectfully traverses the withdrawal of claims 8-10 and 19-20 of Group III, drawn to assay methods of identifying a compound affecting PDE activity. It is submitted that these claims rely on the use of the claimed phosphodiesterase sequences of the claims of Group I. Further, the search and examination of the same phosphodiesterase provided in the claims of Group III can be made without serious burden even though it may include claims drawn to independent or distinct inventions. See MPEP §803. Applicant requests rejoinder of claims 8-10 and 19-20 and prosecution of these claims by the Examiner.

III. Priority

10. Applicant acknowledges the Examiner's statement with respect to priority based on the United Kingdom application filed on September 17, 1999 for which a certified copy of that application was filed in Applicant's parent application.

IV. Continuation of Prior Applications

11. Applicant acknowledges that the pending application is a continuation application of prior U.S. Application No. 09/663,481 filed on September 15, 2000, now abandoned, which claims the benefit of U.S. Provisional Application No. 60/177,326 filed on January 20, 2000. The notation of the pendency and priority claim of the present application to Applicant's prior U.S. and foreign patent applications have been added to the first sentence of the specification as requested by the Examiner.

V. Sequence Rules

12. The specification, FIG. 1 and FIGS. 4A-4D have been amended to incorporate sequence identification numbers. As a result of the incorporation of sequence identification numbers in FIG. 1 and FIGS. 4A-4D, Applicant submits herewith a CFR copy and paper copy of the sequence listing and a statement signed by Applicant's attorney that the content of the paper and the computer readable copies are the same and that no new matter has been added to the application by the designation of the appropriate sequence identification numbers.

13. Applicant respectfully requests that the submitted sequence listing replace the current sequence listing provided in the specification.

VI. Deposit Requirement Statement

14. Applicant's attorney acknowledges and states that the biological deposit as referenced in the specification and claims was made under the terms of the Budapest Treaty and that the biological deposit will be irrevocably and without restriction released to the public upon the issuance of the patent of the present application.

Applicant's attorney further acknowledges and states that the deposit will be maintained in a public repository for a period of 30 years or 5 years after the last request or for the enforceable life of the patent, whichever is longer and that the deposit will be replaced if it should ever become non-viable.

VII. Claim Rejection under 35 U.S.C. §112, first paragraph (enablement)

15. Claims 1, 13, 15, 21 and 23 were rejected under 35 U.S.C. §112, first paragraph, on the basis that the specification, while enabling for an isolated phosphodiesterase of SEQ ID NO:1, does not reasonable provide enablement for any variant, fragment, homologue, or derivative thereof of SEQ ID NO:1. In addition, the Examiner argued that the specification does not enable any person skilled in the art to which it pertains, or which it is most nearly connected, to make the invention commensurate in scope with the rejected claims. Applicant respectfully traverses this rejection.

Applicant acknowledges the Examiner's statement that the specification is enabling for the isolated phosphodiesterase of SEQ ID NO:1.

Claims 1, 13, 15 and 21 have been amended to recite an amino acid sequence comprising SEQ ID NO:1 and amino acid sequences having greater than 97% sequence identity to SEQ ID NO:1 and where these sequences have phosphodiesterase activity. Amended claim 1 further recites an amino acid sequence including amino acids 1-24 of SEQ ID NO:1.

One skilled in the art would know how to make and use the sequences recited in the claims as amended. Assays for measuring phosphodiesterase activity are also known in the art and have been referenced in the specification. As such, one skilled in the art would be able to practice the claimed invention without having to undertake "undue experimentation".

Applicant requests the Examiner to reconsider and withdraw the rejection of claims 1, 13, 15 and 21 under 35 U.S.C. §112, first paragraph, as allegedly not being enabled.

VII. Claim Rejection under 35 U.S.C. §112, first paragraph (written description)

16. Claims 1, 13, 15, 21 and 23 were rejected under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Applicant respectfully traverses this rejection.

Claim 1 has been amended to recite in part "(b)" that the amino acid sequence of the present invention has greater than 97% sequence identity to SEQ ID NO:1.

This amendment complies with the written description guidelines of the United States Patent and Trademark Office. Thus it is submitted that this amended percentage of sequence identity moots the written description rejection.

The U.S. Patent Office has provided guidelines for determining whether the written description requirement is satisfied where a claim recites a “product by function” see “Revised Interim Guidelines Training Materials,” available at <http://www.uspto.gov/web/menu/written.pdf>. In particular, Example 14 therein provides circumstances under which a claim to a “[a] protein having SEQ ID NO:[#] and variants thereof are at least 95% identical to SEQ ID NO:[#] and catalyze the reaction a→b” is fully supported by the specification. See *Id.* at p. 53.

The remaining rejected claims 13, 15, and 21 incorporate the same sequence limitations as recited in claim 1. Claim 23 has been cancelled.

Applicant requests that the Examiner reconsider and withdraw the rejection under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

VIII. Claim Rejections under 35 U.S.C. §112, second paragraph

17. Claims 13, 15, 21 and 23 were allegedly rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant respectfully traverses this rejection.

The Examiner has argued that claims 13, 15, 21 and 23 recite abbreviations “PDE or PDE1B2” which are unclear and allegedly remain undefined. While Applicant disagrees with the Examiner, Claims 13, 15 and 21 have been amended to delete these abbreviations and thereby moot this rejection. Claim 23 has been cancelled.

Claim 15 has been rejected on the basis that it recites the term “expressable”. This claim has been amended to insert the term “expressed” as recommended by the Examiner. Applicant acknowledges the suggestion made by the Examiner to moot this rejection.

Applicant requests the Examiner reconsider and withdraw the rejection of claims 13, 15 and 21 under 35 U.S.C. §112, second paragraph.

IX. Claim Rejections under 35 U.S.C. §101

18. Claims 1, 13, 15 and 23 were rejected under 35 U.S.C. §101, allegedly on the basis that the claimed invention is directed toward non-statutory subject matter. Applicant respectfully traverses this rejection. Claims 1, 13, and 15 have been amended to incorporate the terms “isolated” or “purified” in order to moot this rejection. Support for the terms “isolated” and “purified” is found in the specification at page 9, lines 32-36 and at page 14, lines 7-13. Techniques to isolate or purify a polypeptide are known in the art. Applicant acknowledges the recommendation made by the Examiner to moot this rejection.

Applicant requests that the Examiner reconsider and withdraw the rejection of claims 1, 13 and 15 under 35 U.S.C. §101.

X. Claim Rejections under 35 U.S.C. §102

19. Claims 1, 13, 21 and 23 were rejected under 35 U.S.C. §102 (e) as allegedly being anticipated by Epstein, U.S. Patent 5, 885,834. Applicant respectfully traverses this rejection.

Claim 1 has been amended to moot this rejection; specifically sub part “(b)” has been amended to recite an amino acid sequence having greater than 97% sequence identity to SEQ ID NO: 1. Claims 13 and 21 recite the same sequence limitations as provided in Claim 1. Claim 23 has been cancelled.

Applicant requests that the Examiner reconsider and withdraw the rejection of claims 1, 13 and 21 under 35 U.S.C. §102 (e).

20. Claims 1, 13, 21 and 23 were rejected under 35 U.S.C. §102 (b) as allegedly being anticipated by Beavo et al., U.S. Patent 5,389, 527. Applicant respectfully traverses this rejection.

Claim 1 has been amended to recite, in sub part (b), an amino acid sequence having greater than 97% sequence identity to SEQ ID NO:1. It is submitted that this amendment moots the rejection under 35 U.S.C. §102 (b).

Applicant requests that the Examiner reconsider and withdraw the rejection of claims 1, 13 and 21 under 35 U.S.C. §102 (b).

XII. Conclusion

21. It is believed that the claims of the present application are now in a condition for a Notice of Allowance and action to that end is respectfully requested.

In the event that the Examiner wishes to discuss any aspect of this communication, please contact the undersigned Attorney at the telephone number provided below.

Respectfully submitted,



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AMENDMENTS TO THE FIGURES

The figures have been amended as follows:

This Amendment includes two replacement sheets of drawings for FIG. 1 and FIGS. 4A-4D respectively. These figures have been amended to incorporate SEQ ID NOs. as requested by the Examiner at paragraph 14 of the Office Action mailed June 17, 2005.

Applicant requests that the two enclosed sheets of drawings replace the two corresponding sheets of drawings in the present application which required changes in order to comply with the requirements of 37 CFR §§1.821-1.825.